

Appl. No. 09/759,962
Amdt. Dated November 21, 2005
Reply to Office action of May 19, 2005

REMARKS

This reply is filed in response to the office action dated May 19, 2005.

Reconsideration of the application and the claims is respectfully requested.

On November 17 and 18 of 2005, telephone discussion took place between Examiner Pham of the USPTO and applicant's representative Eunhee Park. An agreement was reached that claim 9 as amended herein would overcome the rejection over the cited references. In this replay, claims 1, 5-8, 12, and 23 are canceled, claim 9 is being amended. As a note, previously added limitation "defined from a structure plan without requiring a physical presence of the structure" is omitted in independent claim 9, at least since the Office Action considers the limitation to have little or no patentable weight. Also, applicant believes that the claims as amended are patentable even without that limitation.

For instance, with respect to newly cited reference D'Ambrisi, although it includes a section on Element Stiffness Matrix, it does not appear to disclose or suggest any one of the claimed analyzing elements "using a minimization technique to minimize the storage requirements of a global stiffness matrix and local stiffness matrix," "using a numerical solution technique that requires only one copy of the global stiffness matrix," "reformulating and reducing only a portion of a global stiffness matrix that changes due to change in member state," or "using a sufficiently higher order integration method to increase the step size thereby reducing the number of steps required for analysis."

Rather, D'Ambrisi appears to disclose that for constituent subelements connected in series, the flexibility matrix of a member can be obtained by adding flexibility matrices of the constituent subelements. This paper appears to specifically deal only with the formation of local stiffness matrix as applied to reinforced concrete members only. It divides the local stiffness into sub-elements and assembles the sub-elements to form only the local stiffness matrix as the title of the paper and the subtitle of the section indicates, i.e., Modeling of Cyclic Shear Behavior in RC Members – Element Stiffness Matrix. D'Ambrisi's method would only work for its reinforced concrete frame element. Because structural elements or even the same structural elements with different

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geometries have different material behavior, D'Ambrisi's model would not work for other structural members. Therefore, claim 9 is believed to be non-obvious.

Since none of the cited references appear to disclose or suggest or teach independent claim 9 as amended, it is believed that claim 9 is allowable. By virtue of their dependencies, it is believed that dependent claims that depend from claim 9 are also allowable for the same foregoin reasons.

Claim 16 was rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 5,842,148 ("Prendergast"). Applicant respectfully traverses the rejection. Prendergast does not disclose or suggest every element claimed in claim 16. For instance, Prendergast does not disclose or suggest "classifying a plurality of structures according to predetermined structure types; sub-classifying the structures within each classified structure type by fundamental structure periods; determining damage functions for the sub-classified structures; and storing the determined damage functions." Rather, Prendergast appears to disclose inspecting and determining structure integrity of wood frame residential structures relative to earthquake shaking and wind forces to quantify potential risk of such structure sustaining damages from such forces. Prendergast appears to disclose a method that includes (a) physical inspection of the structure; (b) estimate its physical characteristics from inspection data and knowledge base of 20 similar inspections; (c) use external publicly available software to determine earthquake forces and wind forces; (d) correlate damage to hazard from a possible knowledge-base of damage from past earthquakes; (e) generate a risk and acceptability report.

Prendergast appears to require inspections and appears to use knowledge based information, rather than science-based. Knowledge based damage may say that a 7.0 magnitude earthquake causes 40% damage in a house. However, it does not disclose, suggest, or teach whether the damage is the foundation or in the roof or in the windows and walls. In addition, Prendergast does not generate these damage functions for "the sub-classified structures." Accordingly, it is believed that Prendergast does not anticipate claim 16. As a note, previously added limitation "defined from a structure plan without requiring a physical presence of the structure" is omitted in independent claim 16, at least since the Office Action considers the limitation to have little or no patentable weight.

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Also, applicant believes that the claim as amended is patentable even without that limitation. By virtue of their dependencies, it is believed that dependent claims that depend from claim 16 are also allowable for the same foregoing reasons.

All pending claims are believed to be patentable and a favorable Office Action is hereby earnestly solicited. If a telephone interview would be of assistance in advancing prosecution of the subject application, the Examiner is requested to telephone the number provided below.

Respectfully submitted,



Eunhee Park
Registration No. 42,976
805 Third Avenue
New York, NY 10022
(212) 751-5700 telephone
(212) 759-9133 facsimile